

THE INSPIRATION WHICH THE JUNIOR ACADEMY OF SCIENCE HAS BROUGHT TO THE HIGH SCHOOL SCIENCE CLUBS IN THE STATE OF ILLINOIS¹

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Four phases of this subject are to be considered here: first, certain inspirational aspects of the history of the movement in Illinois; second, the principles which have been evolved and which may be counted upon to further enthusiasm among the sponsors and club members; third, certain personal results not already implied; and finally, the future of that academy and its relations to other academies.

I. Inspirational History. From the viewpoint of history the work in Illinois began in 1919. Mr. J. L. Pricer was Secretary of the Senior Academy at the time. His annual report² at the Jacksonville meeting included the recommendation that there be "a permanent committee of three on science education in the secondary schools." A nucleus of four high school science clubs was affiliated during that year. Of these clubs, the Danville Science Club, according to the records, is still affiliated. Over the country as a whole, science clubs may be found that have been in existence for 30 or more years, but as science clubs go, with changes in sponsorship as perhaps the greatest hazard of all, this record of a twelve-year affiliation is worthy of emulation. Science clubs can be kept alive from year to year through the inspirational incentives of a Junior Academy of Science.

In the ten-year period which began in 1919, the State Committee met with obstacles. At least twice in that decade, special efforts were made to keep the organization alive. First, there was a printed pamphlet and then a form letter. This information was sent to all recognized and accredited high schools in the State. Neither of these measures, qualitatively or quantitatively, were exactly what was needed. The affiliations gained in one season were lost in the next, if not in the same season. The story of three of the four science clubs, affiliated in one five-year period of that decade, has stood as an inspiration to me. An account of one of those clubs is briefly related in order that you may see some of the benefits a sponsor may obtain from this work.

In the third school of one sponsor's experience, and for the third time, a science club was organized and affiliated. Science clubs seemed indispensable to him. Affiliation with the State Academy of Science

¹ This paper has been condensed from a paper read before the Indiana Junior Academy of Science in its first annual program at Butler University, Indianapolis, Indiana, December 5, 1931.

² Pricer, J. L., Secretary's Report in the "Transactions of the Illinois State Academy of Science," Volume XII, page 17, 1919.

"Proc. Ind. Acad. Sci., vol. 41, 1931 (1932)."

seemed indispensable to the welfare of his clubs. This time the club was some larger than either of the predecessors. There were perfections in detail at all points. A definite program of objectives was developed which reached out into the interests of the community. The club came to have a significant meaning to the members, to the school, and to the community through these activities and through the participation of its members in the annual meetings of the Junior Academy.

This time, contrary to the preceding cases, when his successor was to be chosen one of the requirements imposed by the Superintendent of Schools was that the new teacher be qualified and ready to continue the work of the club. That club is now in the second year of its healthy, desirable activity following the change in sponsors. The two other clubs became inactive in much less time, due to a lack of interest on the part of the science teachers, and due to a failure on the sponsor's part in demonstrating the importance of the work to the administrators.

At the Bloomington meeting, Miss S. Aleta McEvoy of Rockford, Illinois, was made chairman of the Section. Upon her suggestion, the "Illinois Junior Academy of Science," as we now know the affiliated group of high school science clubs, was christened. Emphasis was shifted from the problems of the teacher to those of the student club members. In the first year of her chairmanship, three new clubs were added to the roster. The following year there were twenty-two new clubs, and last year there were 24 more. The number of student delegates attending the annual meeting has kept pace with this growth. These statements may be taken as a general index to the inspiration which the Junior Academy affords the high school science clubs in Illinois.

For the committee in charge of the Junior Academy, it may be said that there are two chairmen, ordinarily; one for the High School Sciences, and one for the Junior Academy embracing the high school clubs. These chairmen have a joint relationship to the remainder of the committee. Thus, a compact committee of five including one college representative has served our needs very well up to the present time. It is a personal opinion, however, that if the annual competition expands much farther, there will be a need for an additional college representative or for another sponsor of an affiliated club. This additional member should be from the city in which the annual meeting is held.

The Illinois Junior Academy of Science is no longer an organism of perplexing constitution and health. Its present status is merely another reward for patience and perseverance; and another tribute to science as a body of knowledge which, in some respects at least, can be as inspiring as that for any other form of human endeavor.

II. Inspirational Principles. The outstanding principle, whether in the local or in the state activities of the affiliated clubs, is that the student members shall actually participate in the various phases of the work; that the organization shall exist primarily for the benefit of these members; that as in classroom work, the sponsors shall derive their personal inspirations through the benefits obtained by their students. This thought ultimately leads to the idea so aptly expressed by Whitman,

when he said in effect that "he most honors my style, who learns under it how to destroy his teacher."

So it is that the Illinois Junior Academy of Science has a group of honorary state officers made up of club-member delegates from over the State. At the time of the annual meeting, these honorary officers perform the official induction ceremony¹ for the new clubs. These new clubs are represented by their own delegates in the ceremony. The major fields of science are considered in these annual programs. If an enthusiastic chemist gives the feature lecture, as did Doctor B. S. Hopkins at the Macomb meeting,² then another field of science is represented by the feature lecture the following year. We have found that one such feature lecture is sufficient for this audience. In addition to the ceremony and the lecture, there is usually an excellent scientific film, and a roll call of the various clubs responded to by a brief statement of the outstanding activity in which each specific club is engaged. The remainder of the morning is spent in examining the entries prepared and entered by the clubs as organizations and by the club members as individuals. This annual competition embraces posters, exhibits, and other projects.

Beginning this year, the awards for this annual competition are to be of the diploma type and will bear the signatures of the Academy officials. The engraved form will be the same for all events and places. This plan will make possible a greater variety of events, will give students an initial, inspiring contact of a permanent nature with the State leaders in science, and will mean a substantial saving in expense. Through the savings thus brought about, the printed magazine can be continued. It is hoped and planned that the annual issues of the magazine may be increased in number as the Junior Academy grows in order that all affiliated clubs may have an adequate voice in it.

No organization is more secure than its financial bases. For this reason, it seems that there should be some explanation of how, financially, both ends are made to meet. Our credited income depends on the following sources:

- (1) Entrance and annual dues of clubs, sponsors, and others, obtained through the efforts of the Junior Academy officials and club sponsors.
- (2) Commission on state-wide adoption of pins worn by students in all affiliated clubs.
- (3) Advertising in the printed magazine.
- (4) Annual contest entry fees.

It is true that the senior organization has made cash contributions and loans in the past, but it is not the policy of the Junior organization to be a financial parasite. Worth-while organizations should not have to be dependent. Financial independence of student organizations can be an important consideration in the training of these same students. In the first year of the present program of the Junior Academy, the receipts

¹ Astell, L. A., "Initiation ceremony of the Edisonian Science Club," *School Science and Mathematics*, 28:771-74 (Oct., 1928).

² Hopkins, B. S., "Opportunities in Science," *Transactions of the Illinois State Academy of Science*, 22:623-29 (May 3 and 4, 1929).

balanced the expenditures within five dollars. Every letter in the follow-up campaign was filled to the limit of postal regulations. These letters were signed but the salutations were to administrators and to science teachers in general, rather than to these individuals personally. Letters of this sort, unsealed, went for a cent and a half rather than for three cents. They were effective, because the envelopes were addressed to the individuals by name, because the series was timed and reached a climax in point of interest approximately two weeks before the annual meeting, and finally because personal requests for information resulting from the form-series were answered personally. Donations in the form of stenographic service and materials were in order then as they are today. Through such careful planning many things can be accomplished for a relatively small amount of money.

During the past year, some financial mistakes were made, but it is thought that the remainder of these mistakes was corrected at the last business meeting. One of these mistakes concerned the magazine, which was published without advertising. The supposition was that the local club sales of copies would cover the cost. This theory might be true for a greater number of affiliated clubs, or for a more adequate meeting of other factors, but it did not prove true for the number of clubs we had at the time. In all fairness, it should be said that the magazine was assembled in less than two weeks in order to be available at holiday time.

The method of handling the moneys is another matter worthy of attention. All receipts from the four sources referred to above pass through the hands of the Senior organization's Secretary and Treasurer. Likewise, the disbursements are made by the Senior Academy on authorized expenditure accounts, except for items of less than five dollars. This relieves the Junior Academy of auditing, and assures all concerned that there is no possible chance for misappropriation or other difficulty.

III. Personal Results Not Implied. Up to this point certain aspects of the history and of the principles, together with the general results incidental to these two phases of the problem, have been considered. There are other results reaching down into the lives and activities of the boys and girls, who wear the Junior Academy pins in Illinois. I shall mention a specific case.

The sponsor of one of the affiliated clubs found a boy member making a day-by-day clipping record of Byrd's South Pole Expedition and as a result built a "Pole to Pole" program around a half-hour talk by this gifted student. The program was presented while Byrd and his men were battling the ice pack. The boy's talk was on "Commander Byrd, His Life and Achievements." Parents of all club members were invited. The boy's talk brought out many things, but most important of all points was an open allegiance to his ideal among the daring and generous leaders of men. Naturally, the boy was one of the delegates to the annual meeting where he had an opportunity to hear Doctor Griffith Taylor's illustrated lecture, "With Scott in Antarctica." The boy's enthusiasm could not be stated mildly. Here before him was the tramping ground of his own Commander Byrd; here another comrade of the icy wastes. While the boy was attending the University of Wis-

consin as a freshman last year, Byrd came to Madison on his lecture tour. The boy must have been keeping an hour-by-hour record of his hero then. At any rate his desire to talk to Byrd personally, to know Byrd as Byrd's own colleagues had known him, became an overpowering influence. Byrd was a guest of the Governor at the moment. Without an invitation, the boy gained admission at the Governor's mansion to stand speechless from emotion in the presence of Byrd and others in attendance. Both Byrd and the Governor sensed the situation and put the boy at ease. That evening the boy sat with the Governor's party in the lecture hall. That evening a far away dream of one more aggressive American boy was fulfilled.

Different emphasis might be placed on the incident, but is it not true that what this boy did in the face of social custom for the sublimation of his interests, represents essentially what a scientist does in the face of accepted thinking to give a fundamental discovery to the world? Boys and girls, as you sit here today, I trust that your Junior Academy at some time and in some way may help to drive you as this boy was driven, beyond the matters of every-day existence to the infinitely important and numerous quests that shall have a profound meaning for your fellowmen. To be a personal leader and be so driven will be a lasting reward to your sponsors and a challenge to your associates.

IV. Inspirational Future. Concerning the inspirational future, it may be said that the Indiana Academy of Science, in making provisions for a Junior Academy, has done what several other State Academies have done or are preparing to do. These states lie in a more or less arc-like area through the United States. Beginning at the eastward, these academies are: North Carolina, West Virginia, Ohio, Indiana, Kentucky, Tennessee, Illinois, Iowa, Kansas, Oklahoma, and Texas.

The decade of experimental effort in Illinois has resulted in a three-year demonstration of enthusiastic response from the affiliated clubs. It has given us a few principles born of experience, and it has given a total of results beyond the expectations of those of us, who have worked longest and hardest over the idea.

For the two years just past, the Conference of the State Academies of Science has officially considered the development of the Junior Academy movement. My invitation to speak before the Conference at Des Moines, Iowa, in 1929 was issued by your Doctor Enders, then Chairman of the Program Committee.¹ Under Doctor Otis W. Caldwell, Chairman of the Committee on the Place of Science in Education, American Association for the Advancement of Science, last year, I was directed to render every possible service to the Junior Academy in Illinois and in other states as a part of my regular duties. Under the able guidance of such distinguished educators, we may be assured that in so far as this work merits support, such support will be found, just as support for the Junior Academy as a State organization in Illinois has been found, and just as now support for your organization here in Indiana is being found.

¹ Astell, L. A., "How State Academies of Science May Encourage Scientific Endeavor Among High School Students," *Science*, 71:445-49 (May 2, 1930).

From the inherent nature of the Academy organizations, however, we may expect for the immediate future that the great contributions of the Junior Academies will be within rather than beyond their respective state jurisdictions. In all these activities, it shall be my personal pleasure to help the movement as much as I am able. I am sure the same may be said for all the officials in the Illinois Academy. To us, this is a matter of expressing our continued appreciation for the inspirations that have come to us in this work.